**ANSWERS**

1. What are the two values of the Boolean data type? How do you write them?

**Ans.** Data type boolean is named after George Boole (1815 – 1864), who invented mathematical logic and defied Boolean algebra. A variable of the primitive data type boolean can have two values : **true** and **false.** We write them using T and F as a capital letter with the rest of the word in lowercase.

2. What are the three different types of Boolean operators?

**Ans.** Three different types of Boolean Operators are as follows :

* And
* Or
* Not

3. Make a list of each Boolean operator's truth tables (i.e. every possible combination of Boolean values for the operator and what it evaluate).

**Ans.** This is as follows :

|  |  |  |  |
| --- | --- | --- | --- |
| **Boolean Value** | **Operator** | **Boolean Value** | **Result** |
| True | And | True | True |
| True | And | False | False |
| False | And | True | False |
| False | And | False | False |
| True | Or | True | True |
| True | Or | False | True |
| False | Or | True | True |
| False | Or | False | False |
| True | Not | NA | False |
| False | Not | NA | True |

4. What are the values of the following expressions?

* (5 > 4) and (3 == 5) - False
* not (5 > 4) - False
* (5 > 4) or (3 == 5) - True
* not ((5 > 4) or (3 == 5)) - False
* (True and True) and (True == False) - False
* (not False) or (not True) - True

5. What are the six comparison operators?

**Ans.** The six comparison operators are as follows :

* ==
* !=
* <
* >
* <=
* >=

6. How do you tell the difference between the equal to and assignment operators? Describe a condition and when you would use one.

**Ans.** == is the Equal to Operator that compares two values and evaluates the result to a boolean while = is the assignment operator that stores a value in a variable.

7. Identify the three blocks in this code:

spam = 0

if spam == 10:

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

print('spam')

**Ans**. The three blocks are everything inside the **if** statement and the lines print (‘bacon’) and print (‘ham’).

8. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

**Ans.** The code is as follows :

spam = int(input())

if spam == 1 :

print("Hello")

elif spam == 2 :

print("Howdy")

else :

print("Greetings")

9.If your programme is stuck in an endless loop, what keys you’ll press?

**Ans.** If a code is stuck in an endless loop we can press Ctrl+C to stop it.

10. How can you tell the difference between break and continue?

**Ans.** The main difference between both the statements is that when break keyword comes, it terminates the execution of the current loop and passes the control over the next loop or main body, whereas when continue keyword is encountered, it skips the current iteration and executes the very next iteration in the loop.

11. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

**Ans.** They all do the same thing. The range(10) call ranges from 0 up to (but not including) 10, range(0,10) explicitly tells the loop to start at 0 , and range (0,10,1) explicitly tells the loop to increase the variable by 1 on each iteration.

12. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

**Ans.** **Program using a for loop**

for i in range (1,11) :

print(i)

**Program using a while loop**

i = 1

while i<=10 :

print(i)

i = i+1

13. If you had a function named bacon() inside a module named spam, how would you call it after importing spam?

**Ans.** This function can be called with spam.bacon().